



Giga-tronics

Microwave Synthesizers

Power Meters

VXI Instruments

Scalar Analyzer

MICROWAVE SYNTHESIZERS

Highest performance for the lowest price

Eight frequency ranges from .01 or 2 GHz to 8, 20, 26.5 or 40 GHz
Twenty-four models—choose the exact performance you need
Under 500 μ s frequency switching speed



The 12000A Series Microwave Synthesizer

With frequency switching speeds typically at 500 μ s, the 12000A outperforms the competition for a fraction of the price. The 12000A features a unique frequency ramp sweep, combining analog speed with digital accuracy for faster, more accurate signal generation while exhibiting high output power and excellent frequency linearity. Coverage at 20, 26.5 and 40 GHz and fast frequency switching make the 12000A ideal for testing satellite communication, radar, fixed wireless and point-to-multipoint broadband systems. For wireless local loop, the 8 GHz version gives complete coverage without requiring you to pay for the full microwave spectrum.

Three different models provide the exact performance you need:

12400A is a CW and step sweep generator with no modulation

12500A is a fully modulated signal generator with CW and step sweep

12700A is a fully modulated signal generator with CW, step and analog sweep

- Eight frequency ranges are available, from .01 or 2 GHz to 8, 20, 26.5 or 40 GHz
- Frequency switching speed is typically less than 500 μ s for any frequency step size
- Linearity errors of ramp sweep are virtually unmeasurable because the phase locked loop and 12-bit DAC continuously control the frequency
- No potentiometers—all analog circuits are digitally controlled to automatically self center
- Three-year warranty is standard and two-year calibration cycle is recommended
- Phase noise at 6 GHz is -85 dBc/Hz at 10 kHz offset
- Output power is +15 dBm or greater from 0.01 to 20 GHz with 0.01 dB resolution
- High output power option provides +20 dBm to 20 GHz
- Output power is +9 dBm from 20 to 40 GHz
- Harmonics are less than -55 dBc from 2 to 20 GHz, and less than -45 dBc from over 20 to 40 GHz
- Pulse modulation (PM) has on/off ratios greater than 80 dB and rise/fall time less than 10 ns
- Frequency modulation (FM) operates at rates of DC to 8 MHz
- Amplitude modulation (AM) depth is 0 to 90% at rates of DC to 150 kHz
- Scan modulation option (log AM) operates over a 60 dB range

VXI MICROWAVE SYNTHESIZERS

The efficient and economical approach

Full-function synthesizer performance in a three-slot VXIbus module
Frequency ranges from a narrow 2 to 8 GHz or as wide as 10 MHz to 20 GHz

Series 50000B VXIbus Microwave Synthesizers

Generate, modulate, level and attenuate RF output signals from 10 MHz to 20 GHz. Obtain unprecedented performance by incorporating the unique Model 52000A single-slot synthesizer control module that provides the digital programming and analog time-based signals required to operate up to eight two-slot 50000B synthesizer modules.

- Eleven models in narrow/wide frequency ranges from 0.01 to 20 GHz
- Control power level: from -100 to +10 dBm with 0.1 dB resolution
- Frequency stability: better than 3 Hz per GHz per day
- Frequency resolution: 1 Hz
- Harmonics: -50 dBc from 2 to 20 GHz
- Phase noise: -97 dBc or less at 100 kHz offset from 2 to 20 GHz



VXI UNIVERSAL POWER METER

The fastest VXIbus power meter

Measurements over GPIB exceed 150 readings per second
Burst Mode captures more than 5000 readings per second

58542 VXIbus Universal Power Meter

Get NIST traceable, lab-grade CW power measurements from a single VXI bus module. You can also measure pulsed RF signals simply by using a Giga-tronics peak pulse power sensor, additionally enabling exact power measurements at any point on the waveform.

- True two-channel operation that displays readings from both channels
- Computer control over GPIB using the SCPI command language
- Accurate CW measurements from -70 to +20 dBm with a single sensor
- Instantaneous peak power measurement of pulsed RF signals
- True RMS, low VSWR sensors and precision CW return loss bridges

BENCH-TOP UNIVERSAL POWER METERS

Faster, easier and more accurate

Measures CW power, pulse power, peak power and average power of digital communication signals
100 kHz to 40 GHz frequency range



8650A Series Universal Power Meters

Get the extensive measurement capabilities and features you need to test today's sophisticated communications systems faster, easier and more accurately. The 8650A measures the CW power, peak power and average power of TDMA, GSM and CDMA (both IS-95 and third-generation 10 MHz wideband) signals. CW measurement readings per second over GPIB exceed 1,750 and modulated measurement speeds exceed 800. The 8650A also has time-saving features such as automatic time gate setting, direct crest factor measurement and statistical power measurement analysis.

- Frequency range: 100 kHz to 40 GHz, depending on sensor
- Power range: -70 to +47 dBm, depending on sensor
- Linearity: ± 0.04 dB over -70 to +16 dBm range
- GPIB CW measurement speed (rdgs/s):
Normal Mode >300 • Swift Mode >1,750 • Fast Buffered Mode >26,000
- GPIB modulated measurement speed (rdgs/s):
Normal Mode >150 • Swift Mode >800 • Fast Modulated Mode >800
- Random sample rate: from 2.5 to 5 MHz
- Maximum diode sensor video bandwidth: 20 MHz
- Maximum instrument video bandwidth: 10 MHz
- CW single sensor dynamic range: 90 dB
- Maximum peak single sensor dynamic range: TDMA/GSM 60 dB • CDMA 80 dB
- Maximum peak power sensor rise time: 100 ns
- Automatic and manual time gate measurements
- Statistical power measurement analysis (histogram, CCDF/CDF, crest factor, standard deviation)
- True RMS, low VSWR sensors and precision CW return loss bridges

BENCH-TOP UNIVERSAL POWER METERS

Meet demands of high-volume throughput

A better combination of price, accuracy, speed and measurement capabilities
Built-in power sweep calibration and frequency calibration factors

8540C Series Universal Power Meters

Built-in features such as power sweep calibration and frequency calibration factors provide an unsurpassed degree of measurement accuracy. The 8540C Series Power Meters have the speed and range to meet the throughput demands of high-volume manufacturing. And the meters can measure the CW, peak and true average power of the complex modulated signals used in EW, radar and communication systems.

- Frequency range: 100 kHz to 40 GHz, depending on sensor used
- Power range: -70 to +47 dBm, depending on sensor used
- Linearity: ± 0.04 dB over -70 to +16 dBm range
- Ability to automatically measure peak and average power of TDMA, GSM and CDMA signals
- 500 readings per second over GPIB
- 4000 readings per second in Fast Buffered Mode
- Instantaneous peak power measurement of a pulse modulated signal
- True RMS, low VSWR sensors and precision CW return loss bridges



SENSOR SELECTION CHART

Frequency Range: 100 kHz to 40 GHz/Power Range: -70 dBm to +47 dBm

CW Power Measurements

80300A Series
80310A Low VSWR Series Sensors

Peak Pulse Power Measurements

80350A Series

True RMS Measurements

80330A Series

Return Loss Measurements

80500A Series Bridges

Modulation Power Measurements

80400A Series up to 40 kHz modulation rates (GSM, TDMA)
80600A Series up to 1.5 MHz modulation rates (GSM, TDMA, 2nd Generation CDMA)
80700A Series up to 10 MHz modulation rates (GSM, TDMA, EDGE, 2nd and 3rd Generation CDMA)

For modulation rates above 10 MHz, use any modulation sensor in the square-law region below -20 dBm.

PEAK POWER METERS

Analyze pulsed waveforms and CW Signals

Automatically applies the correct cal factor from a sensor EEPROM

Single- or dual-channel configuration

8500A Series Peak Power Meters

A built-in display shows measurements such as rise time, fall time and pulse width, plus the pulse profile. In addition, you can use a reference cursor to read peak power at any point on the pulse waveform. Giga-tronics CW and Peak power sensors contain an EEPROM programmed with the frequency calibration factors measured at the factory or in your cal lab. When you key in the frequency at the power being measured, the meter automatically applies the correct cal factor from the sensor EEPROM.



- Rise time: <15 ns
- Sensor frequency range: from 0.03 or 0.75 to 18.5, 26.5 or 40 GHz
- Power range: -20 to +20 dBm Pulse; -40 to +20 dBm CW
- Measurement resolution: 100 ps
- Ability to measure the same point on repetitive pulses at over 70 measurements/second
- Built-in power sweep calibrator with NIST traceable accuracy

SCALAR ANALYZER

Ideal for demanding measurements

90 dB dynamic range and fast power measurements

Includes built-in power meter

8003 NIST Traceable Precision Scalar Analyzer

Measures active and passive components from 10 MHz to 40 GHz. AC and DC detection is available with equal accuracy on the three inputs; standard, high-power, true RMS, low VSWR and triggerable pulse power sensors are available.

- Sensor frequency range: from 0.01 to 18, 26.5 or 40 GHz
- Power range: -70 to +20 dBm CW; -20 to +20 dBm Pulse
- Linearity: ± 0.02 dB (0.5%) over any 20 dB span
- Linearity: ± 0.04 dB (1%) over an 86 dB span



ABOUT THE COMPANY

Giga-tronics Incorporated develops and manufactures test, measurement and control equipment. Its products are used by commercial and defense-related customers to test, calibrate, maintain and design a wide range of wireless communications devices, including mobile cellular systems, microwave telecommunications, Internet broadband connections, satellite earth station uplinks and military and navigation radar.

The company's expertise in RF and microwave technology is reflected in its history of innovation in the field. Founded in 1980, Giga-tronics was the first company to develop a 26.5 GHz microwave signal generator, which became a standard maintenance and calibration tool. Since then, the company has expanded its product line to include power measurement instruments, RF analyzers, ATE switching systems and inspection and sorting equipment.

As a leader in RF and microwave test systems, Giga-tronics continues to build products that not only set industry standards for high-speed measurements and accuracy, but also offer proven performance, reliability and value.



Giga-tronics

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